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Performance Bonds Under the Federal Acquisition Streamlining Act (1994)

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ABSTRACT

With the passage of the Federal Acquisition Streamlining Act (FASA) of 1994, the U.S. Federal Government set in motion a process which is intended to reform the federal acquisition process with the aim of achieving greater efficiency and value. Although numerous initiatives have been adopted in pursuit of this goal, one area which has been neglected is performance bonds. In keeping with the Total Quality Management (TQM) objective of reaping benefits from the "low hanging fruit" first, this paper examines the potential savings available as a result of relatively minor changes to the way requirements for performance bonds on Navy construction contracts are determined.

The result is savings which appear to be "hanging low" indeed. By shifting to a risk-based system of requiring performance bonds only on those contracts with an appreciable default risk, savings of 0.5% to 1.0% of the gross cost of construction appear to be available with very little loss potential.

PERFORMANCE REVIEW OF PERFORMANCE BONDS

Introduction

The procurement system used in obtaining construction and construction related services by agencies within the United States Federal Government is intended to obtain maximum value for the dollars spent while simultaneously avoiding even the appearance of impropriety. However, as may be expected in any organization with many thousands of people involved in the acquisition process, the individual interpretations of these goals can be as diverse as the individuals engaged in the process. Consequently, the Federal Government has evolved an immensely complex set of laws, regulations, and agency policies intended to guide procurement officials in the acquisition process.

Within the Department of the Navy, the major applicable "guidelines" include the Armed Services Procurement Act, Federal Acquisition Regulations (FAR), DoD FAR Supplement (DFAR), Navy Acquisition Supplement (NAPS), Naval Facilities Engineering Command Contracting Manual (P-68), and a myriad of others too numerous to list.

The result of this proliferation of regulations is a system in which the development of U.S. Navy construction contracts is frequently accomplished with a blind reliance on the "boiler-plate" provisions contained in the regulations. Acquisition professionals are routinely forced to abandon their business and/or engineering judgment in favor of absolute regulatory compliance. Worse yet is the fact that career officials, after years of being forced to second their judgment

to the “letter of the law,” may loose the desire, or even the ability, to exercise sound judgment and eventually come to rely solely on the blind application of regulations. At this point, the development of contract requirements becomes a mechanical exercise in matching boiler plate sections of a standard construction specification database to the types of work occurring within the project and adding a standard general administrative requirements section. All of this is accomplished with little or no consideration to the true scope of the project. For example, a contract involving cast-in-place concrete will include the 03300 section of the standard specifications, and all of the included testing requirements, without regard to whether the project includes 30 cubic yards or 30,000 cubic yards of concrete.

This blind reliance on regulations in the development of contracts results in contract documents which do not accurately address the requirements of the project. In addition to the technical problems as described above, similar problems frequently occur in establishing the administrative provisions such as including a requirement for a 2500 activity Critical Path Method (CPM) project schedule in the contract for a small construction or renovation project. This method of contract development may help to ensure that necessary provisions are not inadvertently omitted from the contract, however it also ensures that unnecessary or excessive requirements will likely be included.

On the surface it might not seem that including unnecessary or excessive requirements in a contract constitutes a significant problem. After all, one of the system objectives is to ensure that it procures high quality goods and services

and more stringent requirements ultimately lead to better quality, right? Perhaps. However, recall that the true objective of the procurement system is obtaining "value" for the dollars spent. Examined from the perspective of value, excessive requirements are clearly a problem. When a prospective contractor reviews project documents to prepare a bid, he must assume that he will be expected to comply with all of the provisions contained therein. Thus the bid he submits to the Government will include some allowance for items that the Government may not really require. In the case of the CPM schedule, described above, the schedule alone may require several thousand dollars of administrative effort on the part of the contractor, all of which is passed on to the Government in the contractor's bid. Since this allowance will appear in all bids, the overall price level of the project is escalated.

With this background, it is readily apparent that there is a massive problem which will not be corrected quickly or easily and it is unlikely that a single action could implement the changes necessary to affect the reintroduction of judgment and reason to the federal contracting process. The problem has been recognized at the highest levels of the federal government and with the passage of the Federal Acquisition Streamlining Act (FASA) of 1994, the process of repairing the system has begun¹. The intent of this paper is to focus on a single, simple

¹ General Accounting Office Report No.: GAO/NSIAD-96-139 (Letter Report 06/28/96) Acquisition Reform: Regulatory Implementation of the Federal Acquisition Streamlining Act of 1994, GAO found that: (1) except in two instances, all proposed revisions to the federal acquisition regulations (FAR) needed to implement FASA were published by the May 11, 1995 FASA deadline; (2) the proposed regulation on fraud remedies was published 1 day late and the implementing regulation on alternatives to payment bonds had not been published as of March 1996; (3) 13 of the 29 FAR needed to implement FASA were published in final form by the September 8, 1995 deadline and two regulations were issued in interim form; (4) 11 additional final FAR were published by October 1, 1995; (5) in addition to the regulation on payment bond

element of the standard construction contract requirements which has not already been addressed in the FASA process and to propose a formalized process through which contracting officials can assess the legitimate requirements of a given project and reach rational conclusions with respect to the best method of codifying the requirements in the contract documents.

The specific element which will be the focus of this paper is the administrative requirement for submission of performance bonds by contractors performing Navy construction contracts. Currently this requirement is absolute. Submission of performance bonds is required by law² for all construction contracts exceeding \$25,000.00. This requirement remains despite the FASA objective of shifting from “cookbook management” to “disciplined innovation.” Thus every contractor is required to provide a performance bond to protect the Government from potential default by the contractor. The cost of this bond is typically in the range of 0.5% to 1.0% of the bonded value of the contract³ and is passed on to the Government in the contractor’s bid price.

alternatives, regulations on multi-year contracting and small disadvantaged businesses had not been published by October 1, 1995; (6) the factors that slowed the revision process included translating FASA language and addressing public comments, particularly those on the more complex, innovative, and controversial revisions; (7) there was less compliance with FASA deadlines regarding non-FAR regulations; (8) FAR drafting teams had considerable experience in drafting regulations and used numerous public comments to improve the revisions; (9) certain agencies provided training resources and explanatory materials to help buying activities understand FASA changes and make FAR revisions concise and understandable. Full text of all GAO report cited can be accessed by searching on the report number at: http://www.access.gpo.gov/su_docs

² 40 USC 270a, The Miller Act. Excerpt of the applicable section of the Miller Act is included as Appendix A. Full text is available at <http://www.law.vill.edu/Fed-Agency/fedwebloc.html>

³ Robert L. Peurifoy and Garold D. Oberlender, Estimating Construction Costs, pg. 16 (4th ed. 1989). Representative percentage costs were computed from a graduated cost scale ranging from \$14.40 per \$1000 of bonded value for contracts under \$500,000 to \$6.30 per \$1000 of bonded value for contracts under \$7,500,000.

On the surface it may seem appropriate to have performance bonds provided for all projects, however when examined more closely from the perspective of seeking maximum value for construction dollars spent, some cracks appear. The intent of the performance bond is to protect the Government from the costs associated with a contractor defaulting in the performance of a contract⁴. The bond represents a commitment from a surety, or bonding company, to ensure the completion of the project in the event that such a default occurs. However, events which lead to termination of a contract are relatively rare⁵. Additionally, the bonding companies do not earn profits by readily paying every claim against the bonds they issue. Thus, in the case that the Navy does seek relief of expenses resulting from a contractor's default, the bonding company is likely to engage in legal maneuvers designed to mitigate or eliminate its financial liability⁶. In cases like this the Navy incurs additional legal expenses

⁴ Justin Sweet Legal Aspects of Architecture, Engineering, and the Construction Process, §33.06 pg. 734 (5th ed. 1994)

⁵ General Accounting Office Report No.: GAO/NSIAD-96-106 (Letter Report, 04/18/96), Acquisition Reform: Efforts to Reduce the Cost to Manage and Oversee DOD. GAO found that: an independent study identified over 120 regulatory and statutory cost drivers that increased the price of DOD purchased goods and services by 18 percent. The top ten cost drivers were:

- DOD quality program requirements (MIL-Q-9858A),
- Truth in Negotiations Act (P.L. 87-653),
- cost/schedule control system,
- configuration management requirements,
- contract-specific requirements,
- Defense Contract Audit Agency/Defense Contract Management Command interface,
- cost accounting standards,
- material management and accounting system,
- engineering drawings, and
- government property administration

⁶ Sweet at §33.04 pg. 735. Sweet cites numerous common conditions under which claims against sureties become problematic and describes a variety of defenses which have been successfully employed by sureties to bar claims.

and further delay in the execution of the project which significantly diminishes the value of having the performance bond.

Another performance bond issue which creates cause to question their value is their accessibility by small companies. These companies which are frequently owned by minorities or women often encounter difficulties in obtaining the bonds required to be eligible for federal construction contracts⁷. This effectively removes an entire segment of the market of construction firms from consideration and reduces the competitive environment that the federal procurement system is supposed to foster.

It is fairly clear that the existing system of requiring performance bonds from all contractors is open to substantial improvement and cost savings. With the Navy's FY 97 military construction budget of \$525 million and the operation and maintenance budget of \$19.8 billion⁸, a reduction of 0.5% in the cost of construction contract could save tens of millions of dollars. It is possible that an argument could be made for the simple elimination of the requirement, thus achieving the savings of the bond premium without incurring any expenses from new programs or policies. Unfortunately this approach would leave the Navy

⁷ General Accounting Office Report No.: GAO/RCED-95-173FS (06/26/95) Small Business: Construction Firms' Access to Surety Bonds. GAO found that: (1) 7.2 percent of the minority-owned firms surveyed had obtained surety bonds before 1990; (2) the minority-owned firms tended to be smaller, had less construction experience, and were more likely to have obtained their first bond before 1990; (3) minority- and women-owned firms were routinely asked to provide certain types of financial documentation and collateral to obtain a bond; (4) minority-owned firms were more likely to have been denied surety bonds, and often lost opportunities to bid because of the length of time it took to obtain a bond; (5) the minority and women-owned firms that did not obtain surety bonds were usually not required to have bonds; and (6) the minority and women-owned firms surveyed rarely bid on projects that required bonding.

⁸ Budget amounts included in FY 97 U.S. Federal Budget as recorded in the Congressional Record.

exposed to default risk on every contract. Although terminations for default are relatively rare, they can be very expensive when they do occur. Therefore, it is recommended that an objective evaluation system be devised which can be used to measure the risk exposure the Navy would face on any given contract and impose the requirement for performance bonds only on those contracts where the default risk is deemed to warrant the cost of the bond. The proposed parameters of such a system are outlined in the following Operational Requirements and Risk-Based Performance Bonding System Concept sections of this paper.

Operational Requirements

a. General Description: The proposed system for evaluating the requirement for contractors to provide performance bonds on Navy construction contracts must provide objective data on which a procurement official can assess the costs and benefits of requiring a contractor to provide a performance bond. This information should be based on an evaluation of the project requirements and contractor data, such as, but not limited to, technical complexity, project size and value, historical information on similar projects, contractor's experience on similar projects, contractor's default history, and the contractor's financial stability.

b. Required Capabilities:

1. The system output must be an objective assessment of the default risk to which the agency may be exposed in each contract-contractor combination evaluated.
2. The evaluation process must be designed to be accomplished in the pre-award phase of project procurement.

3. The system must employ principles and practices sufficiently simple that an entry level procurement clerk can reasonably be expected to understand and execute a basic evaluation with minimal training.

4. The system architecture must facilitate electronic transfer of accumulated data at least within the Department of Defense network of procurement agencies⁹.

5. The system must not impose factors, beyond a contractor's control, which adversely impact his ability to compete for Navy contracts. Full and open competition must be maintained, in accordance with the Armed Services Procurement Act. Diminished competitiveness as a result of a contractor's own actions, such as a history of contract defaults, is expected and will be considered as an intangible benefit to the Government.

Risk-Based Performance Bonding System Concept

The proposed system incorporates components of several concepts currently being used in the public and private sectors of the construction industry. The intent is that the use of familiar concepts will facilitate the transition to the use of risk-based determination of performance bonding requirements.

The major concepts already in use include:

Industry Rating of Contractor Performance: Within the Workmen's Compensation Insurance Market, contractors are evaluated for their performance in maintaining safe work sites and preventing compensable injuries from occurring. This evaluation results in the assignment of an Experience

⁹ Establishment of the Federal Acquisition Network (FACNET), as mandated in the Federal Acquisition Streamlining Act of 1994 will provide means of distributing accumulated data.

Modification Rating (EMR),¹⁰ which is public information and is used by the contractor's insurance underwriter to determine the workmen's compensation insurance premium to be charged in light of the claim risk faced by the insurer. As a result of this system, a contractor with an excellent safety record will pay substantially lower insurance premiums and achieve a commensurate competitive advantage over other, less safe firms.

Risk-base Evaluation of Profit Objective: The Navy currently utilizes a risk-based approach to determining objectives for contractors' profit allowances in negotiated procurements. In this analysis, the Contracting Officer evaluates the project and the contractor with respect to such factors as: project technical complexity, management complexity, cost control complexity, the contract type, as well as the contractors input of capital and the time value of money. This information is entered in the form presented in Figure 1 and forms the basis for the Government's negotiating position. Instructions contained within the Federal Acquisition Regulations¹¹ provide "guidance" for evaluating each factor, however the final value assigned is subject to the judgement of the procurement official conducting the assessment.

The proposed system will produce an objective evaluation of the Government's exposure to default risk by a process similar to that currently used by the Navy for Weighted Guidelines Application determination of contractor profit

¹⁰ Donald S. Barrie and Boyd C. Paulson, Professional Construction Management, pg. 220-221 (3rd ed. 1992).

¹¹ Federal Acquisition Regulations, Subpart 15.9 - Profit

objectives in negotiated procurements, described above. The system will be risk-based and incorporate the following Government and contractor factors.

Government Factors:

1. Technical Complexity of the Project: Without regard to the contractor involved, projects which involve experimental technologies or construction of highly complex systems may reasonably be considered as more difficult to execute than more simple projects. Consequently, a contractor is more likely to encounter difficulties which could lead to default.
2. Total Project Cost: Without regard to other factors, the consequences of a contractor default on a very expensive project are more serious than those resulting from a similar default on a less expensive project. Thus the Government faces greater potential liabilities as the project cost increases.
3. Program Factor: This factor involves the potential for costs due to ripple effect. The consequences of a default on a single, isolated project are likely to be less severe than if the project is part of a larger development program. Thus there is likely to be a greater cost risk associated with projects which are part of a larger program.
4. Public Relations Factor: The importance of public relations can not be discounted even in the public sector. Projects with particularly high visibility are subject to greater public scrutiny. Although the profitability of the "firm" is not technically an issue, the occurrence of an unbonded default on a high visibility project may have significant secondary effects beyond the immediate financial impact which might be of less significance otherwise. Not the least of these

secondary effects is an undermining of the public's confidence in the federal procurement process.

| Record of Weighted Guideline Application | | | | | Report Control Symbol DD-P&1Q) 1751 | |
|---|--|--------------------|----------------|-----------------------------|--|----------|
| 1. Report No. | 2. Basic Procurement Identification No. a. Purchasing Office b. FY c. Type Proc Inst Code | | | | 4. Date of Action | |
| | | | | d. PRISN | 5. Year | 6. Month |
| Contracting Office Code | | | Item | Cost Category | Objective | |
| Name of Contracting Officer | | | 13 | Material | | |
| | | | 14 | Subcontractors | | |
| 7. DUNS Number | 8. Federal Supply Code | | 15 | Direct Labor | | |
| | | | 16 | Indirect Expenses | | |
| 9. DoD Claimant Program | 10. Contract Type Code | | 17 | Other Direct Charges | | |
| | | | 18 | Subtotal Costs (13 thru 17) | | |
| 11. Type Effort | 12. Use Code | | 19 | General and Administrative | | |
| | | | 20 | Total Costs (18 - 19) | | |
| Weighted Guidelines Profit Factors | | | | | | |
| Item | Contractor Risk Factors | Assigned Weighting | Assigned Value | Base (Item 18) | Profit Objective | |
| 21 | Technical | % | | | | |
| 22 | Management | % | | | | |
| 23 | Cost Control | % | | | | |
| 24 | Performance Risk Composite | | | | | |
| 25 | Contract Risk Type | | | | | |
| 26 | Working Capital | Costs Financed | Length Factor | Interest Rate % | | |
| | Contractor Facilities Capital Employed | | Assigned Value | Amount Employed | | |
| 27 | Land | | | | | |
| 28 | Buildings | | | | | |
| 29 | Equipment | | | | | |
| 30 | TOTAL PROFIT OBJECTIVE | | | | | |
| Negotiation Summary | | | | | | |
| 31 | Total Costs | | Proposed | Objective | Negotiated | |
| 32 | Facilities Capital Cost of Money (DD Form 1861) | | | | | |
| 33 | Profit | | | | | |
| 34 | Total Price (Line 31 + 32 + 33) | | | | | |
| 35 | Markup Rate (Line 32 + 33 divided by 31) | | % | % | % | |
| Contracting Officer Approval | | | | | | |
| 36. Typed Printed Name of Contracting Officer (Last, First, Middle Initial) | 37. Signature of Contracting Officer | | | 38. Telephone | 39. Date Submitted (YYMMDD) | |
| Optional Use | | | | | | |
| 96 | 97 | 98 | 99 | | | |

Figure 1 - Weighted Guidelines for Profit Form

Contractor Factors:

1. Contractor's Technical Experience: Projects which involve experimental technology or construction of highly complex systems may be inherently more risky than more simple projects, however the involvement of a contractor with abundant experience in the particular technologies included in the project may serve to reduce the Government's risk. Likewise, a contractor not possessing such experience may compound the problem.
2. Contractor's Performance History: A contractor with an established record of contract defaults can reasonably be thought to represent a greater risk of future defaults.
3. Contractor's Financial Stability: Virtually every construction project experiences some difficulties at some point during its execution. These difficulties typically impose some degree of financial hardship on the contractor involved. The Government strives to minimize these impacts however, they can never be completely eliminated. Therefore the contractor's ability to survive short term cash flow problems is a significant factor in predicting the likelihood of default. Furthermore, not all cash flow problems are imposed by external forces. Industry practice includes a substantial propensity for contractors to "buy-into" contracts by purposely submitting bids of less than the actual cost of the project in an effort to stabilize their labor pool or in hopes of obtaining changed work on the project which will be priced at sole-source, negotiated costs rather than being competitively bid.

4. Ratio of Contractor's Current Construction Volume to Bonding Capacity: This factor provides insight into the contractor's current excess production capacity. A contractor that is fully engaged in other projects may be more likely to encounter difficulties in a new project due to insufficient availability of management and production resources to devote to the new project. Furthermore, a contractor who is operating at or near maximum production capacity may be less concerned about the potential loss of a single project. Therefore, it can be argued that a contractor with a high ratio of active construction volume to production capacity may represent a high risk of default on a single new project.

The process flow involved in procurement of construction services under the proposed system would not differ significantly from the current process flow illustrated in Figure 2.

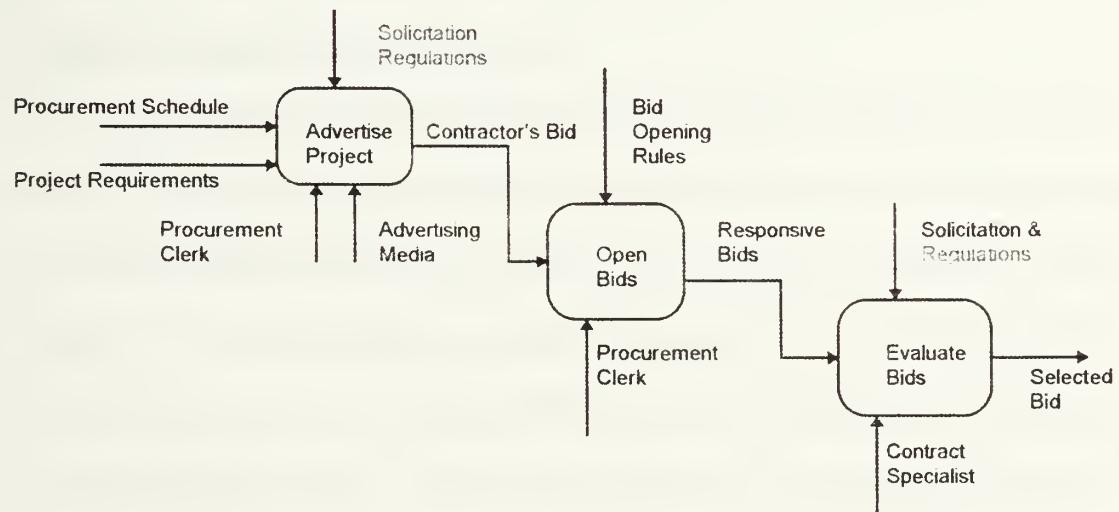


Figure 2 - Current (As-Is) Procurement Process

The changes included in the proposed system occur in the controls highlighted in Figure 2 in red. These changes involve the addition of the risk-based bonding requirement analysis to the solicitation package and incorporation

of the resulting evaluation in the bid evaluation regulations. As noted earlier, the current bonding regulations are firmly rooted in the legislation of the Miller Act, thus Congressional action modifying the Miller Act is a necessary prerequisite to any other recommended changes.

The need for legislative changes notwithstanding, conceptually the revised process of analysis would occur in three phases:

Phase 1: Evaluation of Government Factors:

During the preparation of the project documentation, the Contracting Officer will be required to conduct an assessment of the Government Factors. This evaluation will be based solely on the risks stemming from the project without regard to the impact of Contractor Factors. The result of the Phase 1 Evaluation becomes public information and is included in the solicitation package.

Phase 2: Input of Contractor Factors:

Administration of the Contractor Factors portion of the system would be accomplished by the bonding industry much as the management of Experience Modification Ratings is accomplished by the Workmen's Compensation Insurance industry. The revised bidding procedure will require prospective contractors to provide their rating in the Contractor Factors for the type and size of the project on which they are bidding. Since the Government Factors were provided with the solicitation, prospective contractors will then be able to compute the final risk assessment score and determine whether or not they will be required to provide a performance bond. The scores needed for making this determination would also

be included in the solicitation instructions. With this knowledge, they can then include the bond premium in their bid, or not, as is appropriate.

Phase 3: Bid Evaluation/Verification:

The proposed system will add a step to the Bid Evaluation/Verification process by requiring the procurement clerk to verify that the bids received from responsive contractors include a properly executed Bonding Requirement Evaluation before the selection of the successful bidder is completed.

As with any administrative system, the proposed method of risk-based bonding requirement determinations may be subject to abuses or errors which would result in damage being incurred by the government, thus it is prudent to conduct a preliminary assessment of the potential hazards.

Preliminary Hazards Assessment (PrHA)

The hazards posed by adoption of the proposed system can be separated into two distinct categories: inherent system hazards; and hazards related to organizations resistance to change. As is the case with any proposal for change in a large, bureaucratic organization such as the U.S. Navy there is usually a great deal of resistance to deviating from "the way it's always been done." Moreover, if changes are implemented, there is always pressure to revert to the "old ways" at the first hint of difficulty with the "new way." Thus this Preliminary Hazards Assessment serves two major functions:

1. By conducting a thorough assessment of potential hazards inherent in the proposed system prior to its implementation, adjustments can be made

which will serve to eliminate or mitigate those hazards prior to implementation, thereby improving the potential for ultimate success.

2. Through the early identification of hazards, they become more familiar and thus less threatening. In the unfortunate event that predicted hazards are encountered, there is less outrage generated and less resulting pressure to revert to the old ways.

Additional objectives include:

- * identification of potential hazards which might be faced under the proposed system;
- * development of various scenarios which would result in encountering these hazards;
- * analysis of the likelihood of these scenarios and assessment the potential consequences;
- * development of hazard mitigating strategies

Major Hazards

The classic Preliminary Hazards Assessment is geared towards an examination of physical hazards existing within a system which may lead to damage to personnel and/or equipment. Although it is certainly possible to identify physical hazards which may be present on a construction project as a result of actions occurring within the overall procurement process, there are no clearly identifiable physical hazards specifically associated with the existence of a performance bond, or lack thereof. The hazards which may be encountered as a result of implementing the proposed changes to performance bonding

requirements are exclusively financial in nature. Due to the narrowly defined scope of the proposal there are a very limited number of potential pitfalls. These hazards stem from the contracting officer's assessment of the likelihood of default on a project. If this assessment is ultimately correct then there is no problem. However, if the contracting officer's assessment is ultimately wrong then the Government may encounter one of the hazards inherent in this system. Since the result of the evaluation process is a decision by the contracting officer to require one of two possible courses of action, required bond or not, there are two corresponding major hazards. Each of these hazards are directly associated with the contracting officer's incorrect assessment and are categorized as follows:

Category One: Unbonded Default

After conducting the assessment of the likelihood of default, the contracting officer waives the performance bond requirement and the contractor subsequently fails to execute the project to completion.

Category Two: Unnecessary Bond

After conducting the assessment of the likelihood of default, the contracting officer requires provision of a performance bond and the contractor subsequently executes the project to completion.

A cursory inspection of the above hazards might lead to the conclusion that the consequences of Category One hazards significantly exceed those associated with Category Two hazards. After all, an unbonded default exposes the Government to the total cost of the project while purchasing an unnecessary bond merely adds a 0.5% to 1.0% premium to the project. A more detailed

analysis shows that the comparison is not that simple and that the total consequences associated with each hazard do not differ so dramatically. This conclusion will be examined in greater detail in the Hazard Consequences section.

Accident Scenarios

The proposal calls for the implementation of an evaluation system which employs eight factors to assess the likelihood of default on a project. Four of these factors are used to characterize the potential contractor's contribution to the probability of default and the other four are used to categorize the Government's contribution to the probability of default. The proposed factors are:

Contractor Factors

1. Technical Experience
2. Performance History
3. Financial Stability
4. Capacity Ratio

Government Factors

1. Project Complexity
2. Total Project Cost
3. Program Factor
4. Public Relations Factor

Since each factor must be evaluated for every contractor/project combination and an incorrect assessment of any single factor may cause one of the major hazards to be encountered, the number of potential "accident" scenarios is exceptionally large. The desired outcome of the assessment is heavily dependent on the accuracy of the information collected on each factor and the validity of the model used to assess the factors. Thorough research of contract archives will be necessary to develop the assessment model and guidelines for system implementation. For the purpose of this Preliminary Hazard Assessment the specific scenarios will not be considered since all possible scenarios lead to one of the two hazards. Thus it is more productive to focus on those hazards.

Hazard Consequences

As noted earlier, the hazards associated with the proposed changes to performance bonding requirements are exclusively financial and fall into two categories. The consequences of these hazard are evaluated as follows:

Category One: Unbonded Default

After conducting the assessment of the likelihood of default, the contracting officer waives the performance bond requirement and the contractor subsequently fails to execute the project to completion.

A cursory examination of this hazard appears to indicate a substantial potential financial liability. The purpose of the performance bond is to provide the Government with resources to complete a project for which the original contractor has failed to successfully execute the project to completion. In the event of a default, several factors come into play which diminish the value of the protection provided by the bond. These factors include:

1. Partial Payment Policy¹²: In the execution of construction contracts, the Federal Acquisition Regulations allow for the Government to provide partial payment to contractors for completed work in place and for a percentage of materials which have been delivered but not yet installed. Federal contract law and applicable regulations governing these partial payments dictate that the completed work and the delivered materials covered by a partial payment become the property of the Government immediately upon the contractor's

¹² Federal Acquisition Regulations. Subpart 32.9 - Prompt Payment

receipt of payment¹³. Federal contract law further prohibits contractors from filing liens against Government property¹⁴. Thus as a project is executed and partial payments are made, the value of the work remaining on the contract is diminished. As a matter of policy, the Government representatives managing the contracts seek to ensure that at any point in the life of the project, the remaining project funds exceed the estimated cost to completion of the project. Thus is the event that the contractor defaults, the Government should have sufficient project funds remaining to support the completion of the project. This is never quite true since there are administrative expenses occurred in the process of creating a new contract for the remainder of the project and procurement of a new contractor. Additionally, the new contractor's price will likely exceed the previous contractor's price for the remaining work due to the reduced quantity and complications associated with completing a project that someone else started. However, the operative principle with respect to evaluating the consequences of the unbonded default is that the Government is not truly exposed to the total project cost, but rather the potential liability is limited to the additional reprocurement costs and whatever premium may be required to procure the partial construction. Thus existing policies already mitigate the value of the bond.

2. Contractor's Rights¹⁵: Under existing contract law, a contractor's right to proceed with the project under contract is not necessarily terminated upon his

¹³ Sweet at §22.02(G) pg. 464

¹⁴ Sweet at §28.07(C) pg. 640

¹⁵ Sweet at §33.03 pg. 758

default. Frequently contractors experiencing financial difficulties which impair their ability to proceed with work may request temporary relief from the bankruptcy courts. In this event, the Government is prohibited from taking any action to terminate the contractor's rights to proceed without approval from the court. Thus the presence of the bond does not provide the Government with any relief to move the project forward.

3. Surety's Rights¹⁶: In the event that a bonded contractor defaults in the execution of the project and the Government seeks relief from the bonding company, the most frequent initial response from the surety is a dispute over its obligations. Even if the surety does not dispute the obligation, relief is not immediate since the Government must provide the bonding company with the opportunity to mitigate its liability. This usually involves allowing the bonding company to attempt to complete the project either with the current contractor or by finding a new contractor. Only in the rarest of circumstances will the bonding company simply allow the Government to proceed with reprocurement and reimburse the additional costs incurred. Thus the existence of the bond may provide some relief for excess expenses, but this relief comes with a large loss of control over how the situation is resolved and the schedule for its resolution. On time sensitive projects, which includes most projects, this loss of control may result in a greater decrease of value to the customer from lack of timeliness of delivery than is gained by the recovery of costs from the bonding company.

¹⁶ Sweet at §33.03 pg. 758

Category Two: Unnecessary Bond

After conducting the assessment of the likelihood of default, the contracting officer requires provision of a performance bond and the contractor subsequently executes the project to completion.

The ultimate goal of the procurement system is the provision of optimum value of quality construction services to customers for the costs incurred. Typically the value of this service is measured in terms of cost, quality of construction, and timeliness of delivery. Thus it appears that requiring an unnecessary bond on an individual contract does not represent a significant hazard.

However, it is worthwhile to note that reduction of this hazard serves as the primary motivation for the proposal. The consequences of individual occurrences of this hazard are relatively minor since they are limited to the Government incurring an unnecessary cost of the performance bond which is typically 0.5% to 1.0% of the contract price. Thus each time this hazard is encountered the Government pays a 0.5% premium for the services received under the associated contract. Unfortunately, under the current system this hazard is encountered with overwhelming frequency thus the premium is payment is routine and results in significant excess costs and diminished value.

Conclusions on Hazard Assessment

As noted in the Accident Scenarios section, the comparison of the severity of consequences of the major hazards is not as clear cut as it may appear at first glance. On the basis of the factors discussed in the Hazards Consequences section, above, the Unbonded Default does appear to present greater

consequences, but not decisively so. Never the less, based on the above analysis, a ranking of severity of outcomes of the proposed system is shown in the Hazard Matrix presented in Figure 3.

| | BONDED | UNBONDED |
|------------|--------|----------|
| DEFAULT | 2 | 4 |
| NO DEFAULT | 3 | 1 |

Figure 3 - Hazard Matrix

In order of increasing severity, the potential outcomes of the proposed system are:

1. Unbonded/No default: This option provides the greatest value to the Government. Under this outcome, the contractor successfully completes the project and the Government does not incur the cost of the unnecessary bond.
2. Bonded/Default: Despite the difficulties that may be experienced in collecting on the bond, this outcome indicates that the system has functioned properly. The contracting officer's pre-award evaluation indicated a sufficient probability of default that a bond was required and the contractor subsequently defaulted. The Government's excess costs should be reimbursed by the surety and with cooperation of all parties, the delays to the project will hopefully be minimized.
3. Bonded/No Default: This outcome is evaluated as only slightly less desirable than outcome number two. In this outcome, the project is successfully completed

by the contractor. However, the contracting officer's pre-award assessment of the likelihood of default has been proven to be incorrect and the Government has paid an unnecessary premium for the project in the cost of the bond.

4. Unbonded/ Default: This outcome also indicates a failure of the contracting officer's pre-award assessment of the default probability and presents the greatest potential liability for the Government. However, as discussed above, the consequences are not as severe as the classic analysis indicates. Competent monitoring of project progress and adherence to guidelines on the authorization of progress payment should serve to mitigate the consequences of the unbonded default.

The ultimate conclusion of this Preliminary Hazards Assessment is a confirmation of the critical effect that development of the factor evaluation model will have on the successful implementation of the proposed system. The outcome of any project will depend heavily on the accuracy of the predictive abilities of the default risk model. Furthermore, it points to the need to develop reliable sources of information, particularly for the contractor factors. As the classic cliché says, "Garbage in, garbage out." The predictive accuracy of the model which is ultimately developed will only be as good as the information upon which the model operates.

Conclusions

Introduction of a risk-base method of determining performance bonding requirements does present an opportunity for real savings and the expanded application of professional business and engineering judgment by acquisition

professionals working in the federal acquisition process. However, before these benefits may be realized, additional legislative reform must clear the way for the revised regulations necessary to implement such a system. Once such reform has been achieved, the next step will be a comprehensive review of archived contract data in order to develop the necessary predictive models on which system operating guideline can be based.

While neither of these steps are likely to be accomplished quickly, it does appear that the effort would be worthwhile and in keeping with the intent of the Federal Acquisition Streamlining Act (1994).

APPENDIX A

UNITED STATES CODE TITLE 40 - PUBLIC BUILDINGS, PROPERTY, AND WORKS CHAPTER 3 - PUBLIC BUILDINGS AND WORKS GENERALLY

§ 270a. Bonds of contractors of public buildings or works

(a) Type of bonds required

Before any contract, exceeding \$25,000 in amount, for the construction, alteration, or repair of any public building or public work of the United States is awarded to any person, such person shall furnish to the United States the following bonds, which shall become binding upon the award of the contract to such person, who is hereinafter designated as "contractor":

(1) A performance bond with a surety or sureties satisfactory to the officer awarding such contract, and in such amount as he shall deem adequate, for the protection of the United States.

(2) A payment bond with a surety or sureties satisfactory to such officer for the protection of all persons supplying labor and material in the prosecution of the work provided for in said contract for the use of each such person. Whenever the total amount payable by the terms of the contract shall be not more than \$1,000,000 the said payment bond shall be in a sum of one-half the total amount payable by the terms of the contract. Whenever the total amount payable by the terms of the contract shall be more than \$1,000,000 and not more than \$5,000,000, the said payment bond shall be in a sum of 40 per centum of the total amount payable by the terms of the contract. Whenever the total amount payable by the terms of the contract shall be more than \$5,000,000 the said payment bond shall be in the sum of \$2,500,000.

(b) Waiver of bonds for contracts performed in foreign countries

The contracting officer in respect of any contract is authorized to waive the requirement of a performance bond and payment bond for so much of the work under such contract as is to be performed in a foreign country if he finds that it is impracticable for the contractor to furnish such bonds.

(c) Authority to require additional bonds

Nothing in this section shall be construed to limit the authority of any contracting officer to require a performance bond or other security in addition to those, or in cases other than the cases specified in subsection (a) of this section.

(d) Coverage for taxes in performance bond

Every performance bond required under this section shall specifically provide coverage for taxes imposed by the United States which are collected, deducted, or withheld from wages paid by the contractor in carrying out the contract with respect to which such bond is furnished. However, the United States shall give the surety or sureties on such bond written notice, with respect to any such unpaid taxes attributable to any period, within ninety days after the date when such contractor files a return for such period, except that no such notice shall be given more than one hundred and eighty days from the date when a return for the period was required to be filed under title 26. No suit on such bond for such taxes shall be commenced by the United States unless notice is given as provided in the preceding sentence, and no such suit shall be commenced after the expiration of one year after the day on which such notice is given.

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